

Application No. 10/560,802
Paper Dated: April 14, 2008
In Reply to USPTO Corres. of Jan. 15, 2008
Attorney Docket No. 0815-053669

REMARKS

Claims 1 to 5 have been cancelled.

Claim 6 has been amended to make clear that the apparatus defined by structure in the body combines labyrinth and damper seals.

Claim 9, dependent on claim 6, has been added.

Filed herewith are two Terminal Disclaimers, along with the requisite fees, to overcome the obviousness-type double-patenting rejections of the claims of Application No. 10/560,800 and Application No. 10/560,798.

The Examiner has rejected claims 1 to 8 under 35 U.S.C. § 102(b) as being anticipated by Plemmons et al. U.S. Patent No. 5,218,816.

Reconsideration is requested.

Plemmons et al. discloses a gas turbine engine comprising a low-pressure compressor (LPC) and a high-pressure compressor (HPC) which operates on different shafts at different speeds. A labyrinth seal 42 is provided between the low-pressure shaft 18 and the high-pressure rotor 38. The labyrinth seal has an abradable surface that may be honeycombed. The labyrinth seal has no stationary parts.

The Plemmons et al. structure does not respond to Applicants' claims. The labyrinth seal 42 of Plemmons et al. is arranged in an entirely different environment than that claimed by Applicants and is not directed to solving the problem addressed by Applicants. Note that the low-pressure shaft 18 does not carry annular teeth and has no adjacent smooth section with a radially outward damping means. The teeth 50c are supported by a shell structure 50 (not a shaft) bolted to the high-pressure rotor 38. If the Examiner is urging that the shell structure 50 responds to the shaft in Applicants' claims, there still is no damper seal adjacent to the labyrinth seal. The Examiner points to the surface 48b as a damper section, but the surface 48b is not radially outward of a smooth land enabling the formation of a damper seal. Not only is the shaft 18 facing the surface 48b not "radially outward" of the surface, it does not comprise a "stationary" surface. Applicants' claim 6 and the claims dependent thereon cannot be read on the structure disclosed in Plemmons et al.

The Examiner has rejected claims 1 to 8 under 35 U.S.C. § 102(b) as being anticipated by Zhou et al. U.S. Patent No. 6,499,742.

Reconsideration is requested.

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Zhou et al. discloses a brush seal between two single tooth labyrinth seals that cut into a honeycomb abradable surface. The Zhou et al. patent does not disclose a damping means. The presence of a honeycomb surface itself does not provide a damping seal or damping action. The honeycomb surface must be radially outward of a smooth land surface as set forth in the claims and illustrated in the Applicants' drawings. There is no suggestion in the Zhou et al. reference that the honeycomb sections provide damping. Basically, the honeycomb is simply a form of abradable surface for the single tooth labyrinth seal which protects the brush seal from excessive flow. Note that the base of the teeth in a labyrinth seal is spaced from the tip of the teeth and the abradable surface in order to provide the sinuous path that restricts the axial flow of gases whereas the radial space between the shaft and damping means is much closer. (See Applicants' Fig. 1.) Applicants' claim 6 and the claims dependent thereon cannot be read on the structure disclosed in Zhou et al.

In view of the foregoing remarks and amendments, it is urged this case is now in condition for allowance

Respectfully submitted,

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